

10/597495
2-26-09

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
18 August 2005 (18.08.2005)

PCT

(10) International Publication Number
WO 2005/075122 A1

(51) International Patent Classification⁷: **B21D 22/00**,
B23P 15/14, B21K 1/30, B21D 53/26

KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(21) International Application Number:

PCT/US2005/002625

(22) International Filing Date: 31 January 2005 (31.01.2005)

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

10/769,740 30 January 2004 (30.01.2004) US

Declaration under Rule 4.17:

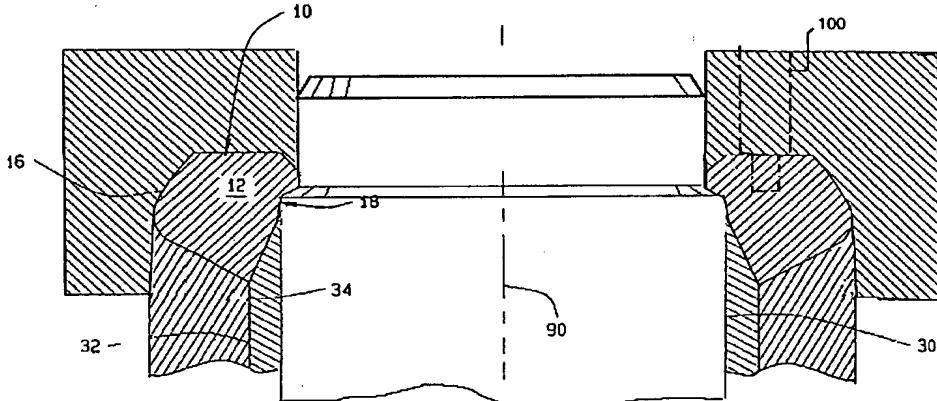
— of inventorship (Rule 4.17(iv)) for US only

Published:

— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: RING GEAR AND MANUFACTURING METHOD FOR SUCH A RING GEAR



WO 2005/075122 A1

(57) Abstract: A method of manufacturing a forged article (10) including a surface (18). The method includes defining a negative tooling pattern (52) based on the surface and providing a tooling set (28) having an anvil (30) and top (36) and bottom die (34). An upper surface (40) of the bottom die conforms to the negative tooling pattern. When the tooling is assembled the anvil extends through the bottom die and defines an axis. Additionally, the bottom and top dies cooperate to define a die cavity (76). A hollow blank (38) is preheated and placed on an anvil and into the die. In a single stroke, the hollow blank is pressed between the top and bottom dies in a pressing direction that is parallel to the axis. The preheating temperature T_w is a function of the homologous temperature ratio T_w/T_m is between .62 and .80, where T_m is the absolute melting temperature of the alloy.